THEO 281ABC War, Law, and Ethics
This course is designed to explore ethical and legal considerations related to war and the use of force. We will also consider the ethical implications of related issues, e.g., sanctions, war crimes, humanitarian intervention, and terrorism.
Professor Beyerchen teaches and researches in nineteenth and twentieth century German history. His research focuses on the relationships among science, technology, and modern values as reflected in the economic and political developments in the nineteenth- and twentieth-century.

Dr. Jay C. Davis served since 2001 as the first National Security Fellow at the Center for Global Security Research. At Lawrence Livermore National Laboratory. Prior to that, he served as the founding Director of the Defense Threat Reduction Agency of the United States Department of Defense.
Why do you take this class!
28,800: The total number of intact nuclear warheads retained by the United States and Russia.
30,000: Number of intact nuclear warheads throughout the world. 17,500 of these are operational.
128,000+: Estimated number of nuclear warheads built worldwide since 1945. All but 2 percent of these nuclear warheads have been built by the United States (55% or 70,000+) and Russia (43% or 55,000+).
10,729: Total number of intact U.S. nuclear warheads (274 warheads are awaiting dismantlement)
10,455: Total warheads in the U.S. stockpile
~7,000: Number of operational strategic U.S. nuclear weapons
~1,600: Number of U.S. tactical nuclear weapons (~800 of these are operational)
8,400: Total number of operational nuclear warheads in Russian arsenal
5,000: Approximate number of Russian strategic nuclear weapons
3,400: Approximate number of operational Russian tactical nuclear weapons (total tactical arsenal said to comprise as many as 10,000+ weapons)
3,500: Approximate number of strategic U.S. nuclear weapons, year 2003 under START II.
3,000: Approximate number of strategic Russian nuclear weapons, year 2003 under START II.
~2,000: Maximum number of deployed strategic nuclear weapons that will remain in the U.S. and Russian arsenals by 2012 (The Treaty of Moscow (also known as SORT) signed by U.S. President George W. Bush and Russian President Vladimir Putin in May 2002)
10,000: The number of warheads the United States will retain in 2012 (essentially the same number as today)
$3.5 trillion: Amount the United States spent between 1940 and 1995 to prepare to fight a nuclear war.
$27 billion: Amount the United States spends annually to prepare to fight a nuclear war.
$2.2 billion: Cost for one B-2 bomber (21 were authorized by Congress).
$2.5 billion: The lifecycle cost of each B-2 (RDT&E, procurement, operations, maintenance, support).

The figures cited above were gathered with the aid of resources from the National Resources Defense Council (NRDC): website. www.nrdc.org
The History of warfare in the 20th century
The Physics of the bomb

235 U Fission

Binding energy per nucleon (MeV) in U

Mass Number, A

- Fast particles
- Deuterium (m=2)
- Tritium (m=3)

Deuterium-Tritium Fusion
Technical Design of Bomb

Little Boy

Fat Man
The Effects of Nuclear Weapons
Medical Consequences

"Lethal effects of radiation can be summarized briefly: a very high dose (5000 rads +) causes death in hours; a smaller but lethal dose (400 rads +): death in weeks. In the latter case, sickness starts with diarrhea and vomiting, followed by some temporary improvement, and then the same symptoms recur with the addition of hemorrhage, anemia, infections, and a slow death."

The U.S. "Federal Emergency Management Agency" predicts approximately 86,000,000 people dead and 34,000,000 severely injured in the United States. There are about 2,000,000 hospital beds in Canada and U.S.A. combined.
International Nuclear Weapon Treaties

**Treaty on the non-proliferation of nuclear weapons (1968)**
Entered into force March 5, 1970

The States concluding this Treaty, hereinafter referred to as the "Parties to the Treaty",

Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples,

Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war,

In conformity with resolutions of the United Nations General Assembly calling for the conclusion of an agreement on the prevention of wider dissemination of nuclear weapons,
Moral and Ethical Aspects
"I am become death, the destroyer of worlds."